		New York State Department of Transportation **ENGINEERING BULLETIN**	**EB 14-036**
			Expires one year after issue unless replaced sooner

Title: **HIGHWAY DESIGN MANUAL REVISION NO. 80 – CHAPTER 7 RESURFACING, RESTORATION AND REHABILITATION (1R, 2R & 3R) – LIMITED REVISION**

Target Audience :

- ☐ Manufacturers (18)
- ☒ Local Govt. (31)
- ☒ Agencies (32)
- ☐ Surveyors (33)
- ☒ Consultants (34)
- ☒ Contractors (39)
- ❑ _____( )

Approved:

/s/Richard W. Lee — 10/24/14 Date

Richard W. Lee, P.E.
Director, Office of Design

ADMINISTRATIVE INFORMATION:

- **Effective Date.** HDM Chapter 7 is effective upon signature.
- **Superseded Issuances.** None.

PURPOSE: To announce the availability of a Limited Revision No. 80 to Highway Design Manual (HDM) Chapter 7- Resurfacing, Restoration and Rehabilitation (1R, 2R & 3R).

TECHNICAL INFORMATION: HDM users should replace their entire existing Chapter 7 with the updated version dated 10/17/2014. This design guidance clarifies requirements for Americans with Disabilities Act (ADA) requirements on 1R projects by supplying compliance criteria for curb ramps and street crossings. Substantive changes include:

- A new subsection (7.3.2.1) that provides guidance for placing or replacing curb ramps and street crossings on 1R projects.
- A new exhibit (7-1a) that furnishes acceptable values for "reasonably close conformance" to determine the need for replacement or rehabilitation of curb ramps and crosswalks on 1R projects.

Changes regarding lane and shoulder widths, consistent with the guidance in EI 13-021, have also been made to Section 3.2.1 and Exhibits 7-1, 7-4, 7-5, 7-8 and 7-9.

IMPLEMENTATION:
Refer to the effective date. This issuance is a clarification of existing guidelines, and defines standards that are slightly less rigorous than those used previously. Current designs should not be affected.

TRANSMITTED MATERIALS: None.

- The revision has been incorporated into the on line version of HDM Chapter 7 at: https://www.dot.ny.gov/divisions/engineering/design/dqab/hdm/chapter-7
- The pages modified by this revision can be found in the HDM Revisions Log at: https://www.dot.ny.gov/divisions/engineering/design/dqab/hdm/hdm-revised-logs

BACKGROUND: A technical advisory that was issued jointly by the U.S. Department of Justice and U.S. Department of Transportation in July 2013 determined that 1R projects are considered "alterations." As such, 1R projects must address the need for new, accessible curb ramps and crosswalks, as well as the adequacy of existing curb ramps and crosswalks.

Criteria for evaluating existing pedestrian facilities on resurfacing projects are found in the 1991 *Americans with Disabilities Accessibility Guidelines* (ADAAG). The ADAAG states that, where acceptable dimensions are not given as a range, "conventional industry tolerances" apply. However, the Access Board has acknowledged (in the introduction to its 2011 Dimensional Tolerances in Construction and for Surface Accessibility report) that there is no single authoritative resource for these tolerances, and in many cases, no such tolerances exist. The report notes that many industry groups have declined to codify or develop tolerances, and that the absence of specific direction

from industry regarding these issues creates significant problems for users trying to comply with surface accessibility requirements. To facilitate the department's effort to comply with the USDOT/USDOJ ruling, and to make the most effective use of resources in improving accessibility on transportation maintenance projects, the consistent application of standardized evaluation criteria is necessary. Department staff have expressed a need for clearly defined construction tolerances to assist them in accurately assessing existing curb ramp and crosswalk deficiencies, and determining if they are in need of rehabilitation or replacement.

To address this need, ADA Compliance Criteria for 1R Projects have been introduced into Chapter 7 (in Exhibit 7-1a). Wherever possible, "conventional industry tolerances" have been used to define acceptable values for reasonably close conformance to the ADA guidelines. Where no such tolerances exist, the criteria reference the recommendations made in the Access Board's 2011 Dimensional Tolerances report, or recommendations made in ***The Handbook of Construction Tolerances,*** both authored by David Kent Ballast, AIA. A table showing the tolerances is included in HDM Chapter 7 as Exhibit 7-1a, and is included below, with references identifying the sources for the defined values:

Element	1991 Design Values (Based on ADAAG)	Acceptable Constructed Values (Reasonably Close Conformance)	Conventional Building Industry Tolerance or Alternative Source for Close Conformance Value
Curb with no ramp to sidewalk	If not at grade, must install ramp to current standards (HDM Chapter 18)	If not at grade, must install ramp to current standards	n/a
Ramp Width	36 in. minimum exclusive of sloped sides	35.25 in. minimum exclusive of sloped sides	***Handbook of Construction Tolerances***, 2007, David Kent Ballast, AIA, CSI, 2007 A suggested tolerance of ± ¾" is shown for "widths of sidewalk and other paving" in *Figure 1-4, Recommended tolerances for right-of-way construction*
Ramp Grade	1:12 (8.33%) max. or, if not achievable, the flattest slope that will fit within 15 ft. length.	8.83% or, if not achievable, the flattest slope that will fit within 15 ft. length.	**Dimensional Tolerances in Construction and for Surface Accessibility,** January 2011 (Final report, prepared for the United States Access Board by David Kent Ballast, AIA, CSI) Section 1.2 (Suggested Tolerances) states that the recommended tolerance for ramp slopes is +0.5%. Additionally, when a design slope of 1:12 is indicated, a tolerance of +0.5% is reasonable.
Ramp Side Flares *Needed when ramp is within pedestrian path. Otherwise sides can be vertical or curbed.*	1:10 (10%) max. with 4' x 4' min. landing at top of ramp. 1:12 (8.33%) max. without landing.	10.5% max. with landing 8.83% without landing	***Handbook of Construction Tolerances***, 2007, David Kent Ballast, AIA, CSI, 2007 A suggested tolerance of +0.5% is shown for "Curb ramp, flare slope" in *Figure 1-4, Recommended tolerances for right-of-way construction*

Element	1991 Design Values (Based on ADAAG)	Acceptable Constructed Values (Reasonably Close Conformance)	Conventional Building Industry Tolerance or Alternative Source for Close Conformance Value
Ramp Surface	Check for tripping hazards such as protruding or depressed grates, access covers, etc. Maximum vertical difference of ¼ in. or, if between ¼ in. and ½ in., bevel edge at 1:2.	Check for tripping hazards such as protruding or depressed grates, access covers, etc. Maximum vertical difference of ¼ in. without edge treatment. If between ¼ in. and ½ in., bevel edge at a slope of no more than 1:2.	***2009 TCA Handbook***, published by the Tile Council of North America and referenced in **Dimensional Tolerances in Construction and for Surface Accessibility,** January 2011 (Final report, prepared for the United States Access Board by David Kent Ballast, AIA, CSI) "Changes in level up to 1/4" may be vertical and without edge treatment. Changes in level between 1/4" and 1/2" shall be beveled with a slope no greater than 1:2."
Detectable Warnings	Shall install if ramp is being replaced.	Shall install if ramp is being replaced.	n/a
Clear Width at base of curb ramp	48 in. minimum	47.25 in. minimum	***Handbook of Construction Tolerances***, 2007, David Kent Ballast, AIA, CSI, 2007 A suggested tolerance of ± ¾" is shown for "widths of sidewalk and other paving" in *Figure 1-4, Recommended tolerances for right-of-way construction*
Crosswalk Surface	Check for tripping hazards such as protruding or depressed grates, access covers, etc. Maximum vertical difference of ¼ in. or, if between ¼ in. and ½ in., bevel edge at 1:2.	Check for tripping hazards such as protruding or depressed grates, access covers, etc. Maximum vertical difference of ¼ in. without edge treatment. If between ¼ in. and ½ in., bevel edge at a slope of no more than 1:2.	***2009 TCA Handbook***, published by the Tile Council of North America and referenced in **Dimensional Tolerances in Construction and for Surface Accessibility,** January 2011 (Final report, prepared for the United States Access Board by David Kent Ballast, AIA, CSI) "Changes in level up to 1/4" may be vertical and without edge treatment. Changes in level between 1/4" and 1/2" shall be beveled with a slope no greater than 1:2."

CONTACTS:

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